

G-051

17

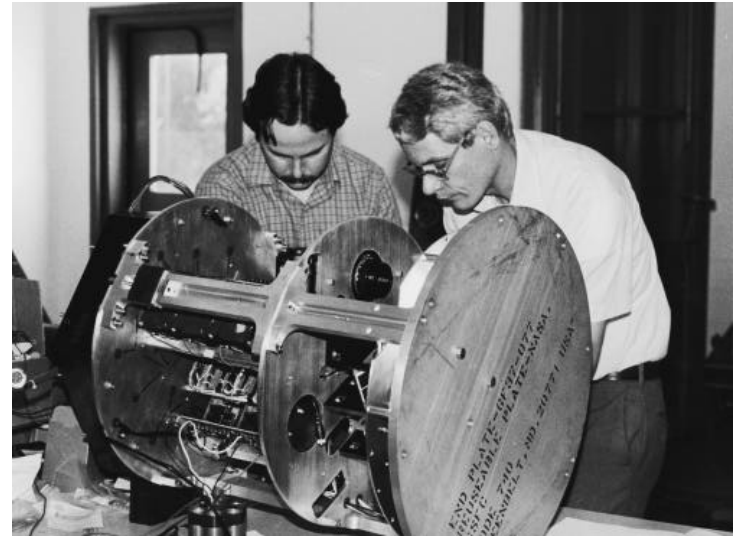
Customer: GTE Laboratories, Inc.;
Paul E. Ritt

Payload Mgr: Alfred Bellows

NASA Tech Mgr: Richard J. Palace

Mission: STS-41-B, February 3, 1984

Gas-discharge lamp research: GTE Laboratories flew G-051 to test the effects of microgravity on Sylvania Metalarc lamps. These high-powered gas-discharge lamps are used in industrial buildings, stadiums, and other sports facilities. On Earth, gravity-induced convection plays an important role in the separation of vapors that are mixed in the arc tube. This de-mixing produces changes in light output, color, and overall lamp efficiency. GTE flew its payload to see what would happen inside the arc tube when the effects of gravity were separated from other influences. Three cameras were programmed to take over 700 photographs of the arc tubes and to collect data on power, temperature, and light output throughout the experiments.



(L to R) Glen Duchene and Alfred Bellows of GTE made final preparations of the gas-discharge lamp experiment.

G-004

18

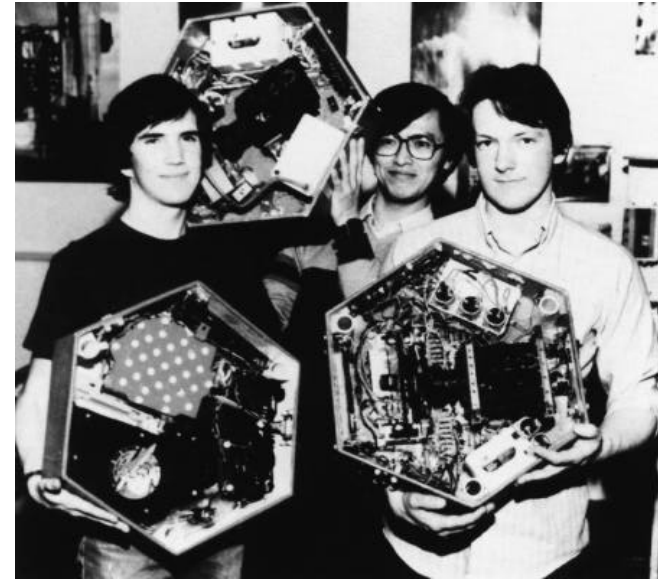
Customer: Utah State University;
Dr. L. R. Megill

Payload Mgr: Dr. L. R. Megill

NASA Tech Mgr: Ernest Busboso

Mission: STS-41-B, February 3, 1984

International sharing: Space science students at the University of Aberdeen in Scotland used one of the University of Utah's (USU) newly designed space paks on this payload. Aberdeen students flew experiments on spore growth, three dimensional Brownian motion, and dimensional stability. USU students filled two other space paks in G-004 with experiments that probed capillary action in the absence of the overpowering force of gravity. One of the experiments looked at capillary waves on a water surface; the other, at thermocapillary flow in columns of melted wax.



Utah students (L to R) David Prince, Sawat Tantiphanwadi, and Scott Thomas proudly displayed their space paks. (Photo by J.B. Edwards, Hercules, Inc.)

G-309

19

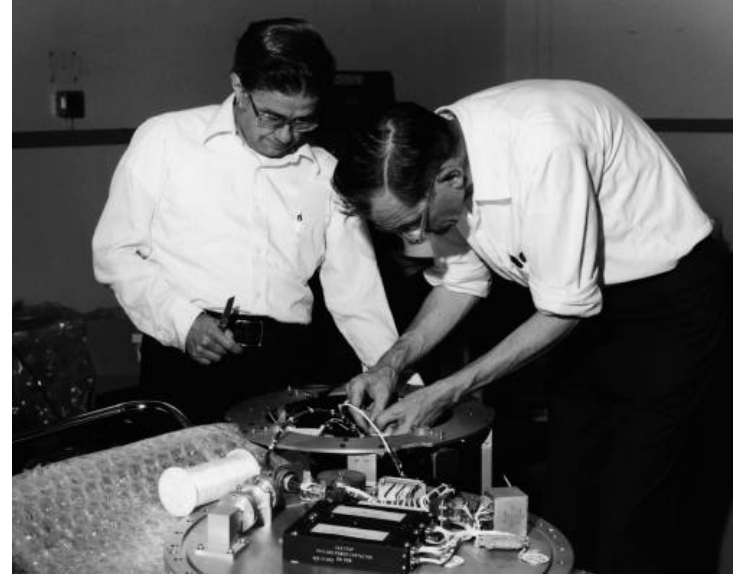
Customer: Dept. of Defense Space Test
Program; Colonel John T. Viola

Payload Mgr: John W. Adolphson

NASA Tech Mgr: Norman E. Peterson, Jr.

Mission: STS-41-B, February 3, 1984

Since existing data on the sensitivity of microcircuits to cosmic rays in space was sparse and inconclusive, the Department of Defense (DoD) flew the Cosmic Ray Upset Experiment (CRUX) again. This payload, first flown on STS-8, contained a device sensitive to cosmic rays. Thereby, experimenters could establish a good baseline reference of the probability and incidence of cosmic rays inducing errors in microcircuits.



(L to R) CRUX I and II's technician and design engineer, George Schoppet and John Yagelowich.

G-008

20

Customer: Utah State University;
Dr. L. R. Megill

Payload Mgr: Dr. L. R. Megill

NASA Tech Mgr: Ernest Busboso

Mission: STS-41-B, February 3, 1984

Two universities and a high school from Utah shared payload G-008, purchased by the Utah section of the American Institute of Aeronautics and Astronautics. Three students from Brighton High School in Salt Lake City prepared a radish seed germination experiment to determine if light sources could control the direction of stem growth in the absence of gravity. A University of Utah group studied the crystallization of three different protein samples (human antibodies) in small capillary tubes. Utah State University students redesigned a soldering experiment already flown on STS-4 and tested a heat pipe to be used in a future space experiment.



*Gilbert Moore, Thiokol Corporation, and David Prince, Brighton High School, Utah watched the Space Shuttle take to space.
(Photo by J.B. Edwards, Hercules, Inc.)*

G-349

21

Customer: Goddard Space Flight Center;
Noel W. Hinners

Payload Mgr: Roy McIntosh

NASA Tech Mgr: Mark D. Goans

Mission: STS-41-B, February 3, 1984

To expand knowledge of the little understood phenomenon of atomic oxygen erosion, Goddard Space Flight Center experimenters flew the atomic oxygen Contamination Monitor Package (CMP) a second time. Whereas the CMP's first flight on STS-8 had been at an attitude and altitude which enhanced the effects of atomic oxygen, its flight on STS-41-B exposed it to a normal orbit where little atomic oxygen was expected. Experimenters then compared the corrosive effects from both altitudes.



Roy McIntosh prepared the Atomic Oxygen Experiment for its second flight.